

FIGURE 1

1. The first group of people who are interested in the study of the history of the United States are the people who are interested in the history of the United States.

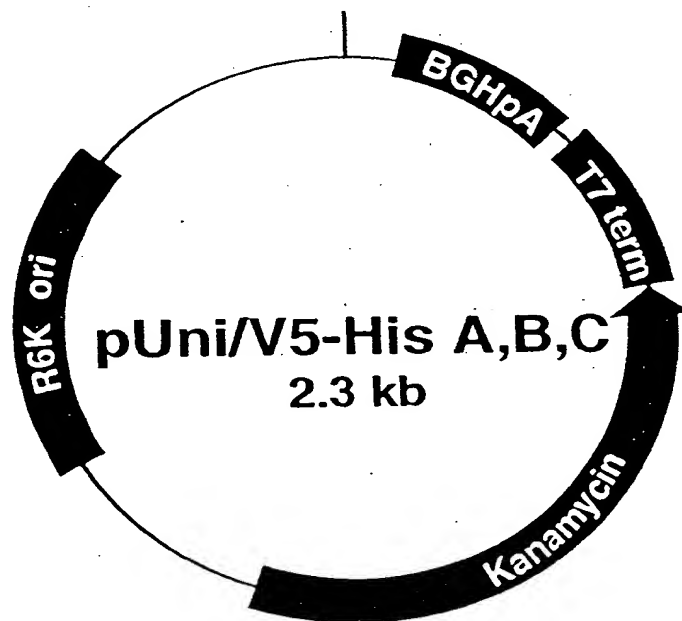


FIGURE 3

1



1. The first of these is the fact that the
 2. second of these is the fact that the
 3. third of these is the fact that the
 4. fourth of these is the fact that the
 5. fifth of these is the fact that the
 6. sixth of these is the fact that the
 7. seventh of these is the fact that the
 8. eighth of these is the fact that the
 9. ninth of these is the fact that the
 10. tenth of these is the fact that the

FIGURE 5

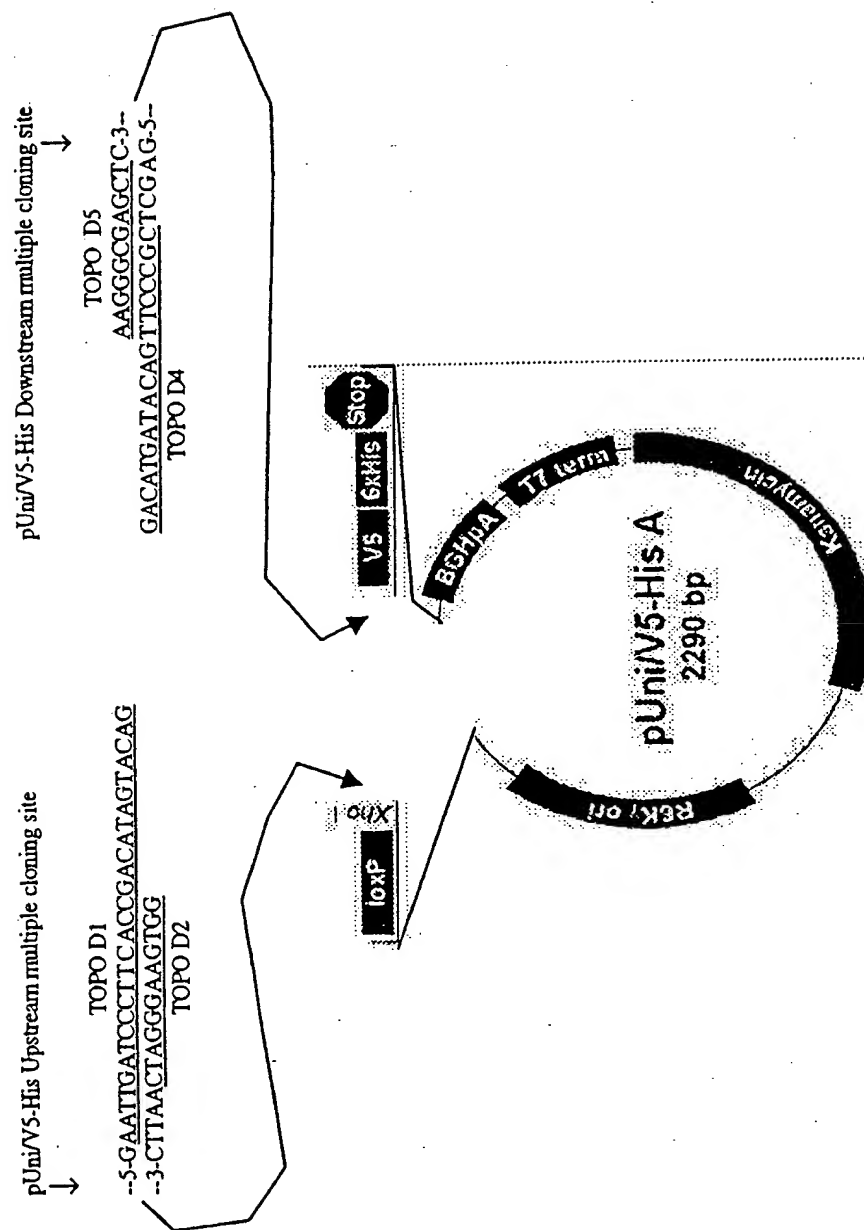


FIGURE 7

[illegible]

FIGURE 8

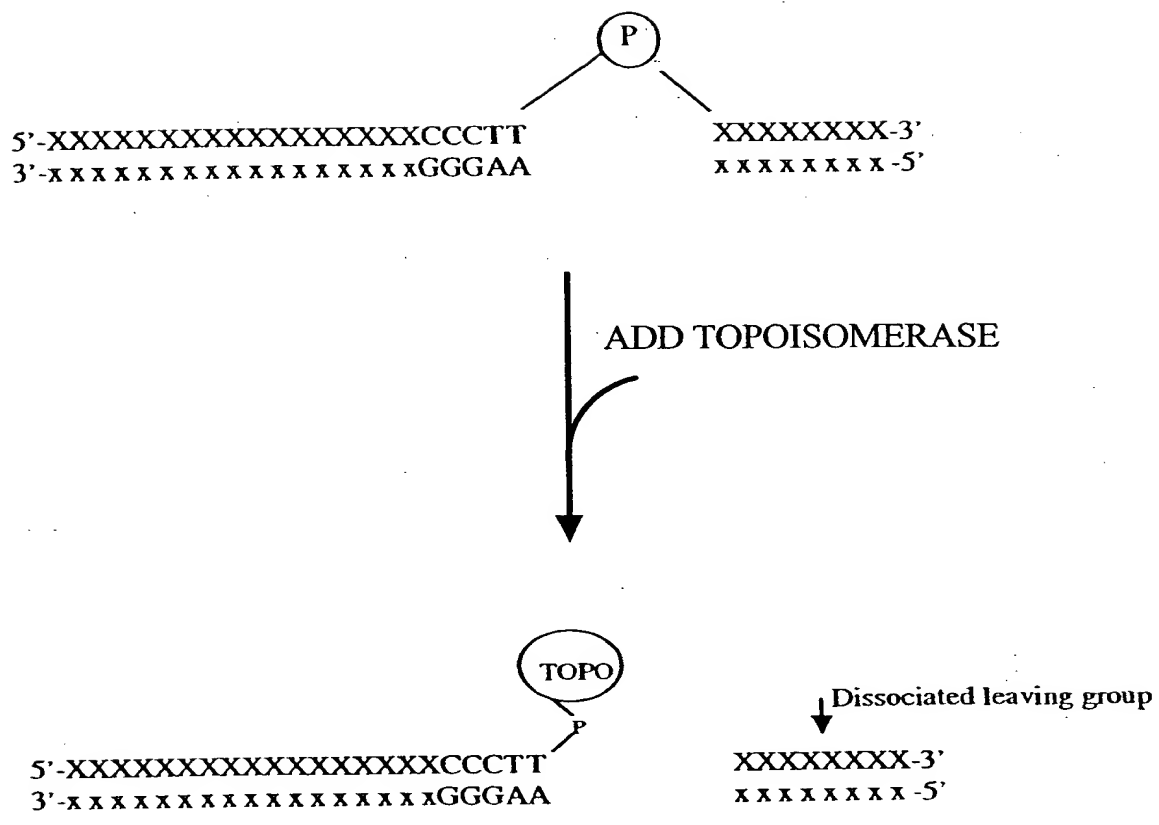


FIGURE 9

Diagram illustrating the pUni/V5-His A plasmid construct and its linearized form.

Plasmid Construct (Circular):

- Size: 2290 bp
- Origin of Replication: **ori**
- Antibiotic Resistance: **Kanamycin**
- Termination: **T7 term**
- Promoter: **BGHpA**
- Gene: **V5 His**
- Stop Codon: **Stop**

Linearized Plasmid:

- Sequence: **V5 His**
- Stop Codon: **Stop**

TOPO D3 Sequence:

5'-GAATGATGCTTCACCGACATAGTACAG-3'

3'-CTTAAGGGAAGTGGTGTATCAATGCAAC-5'

FIGURE 10

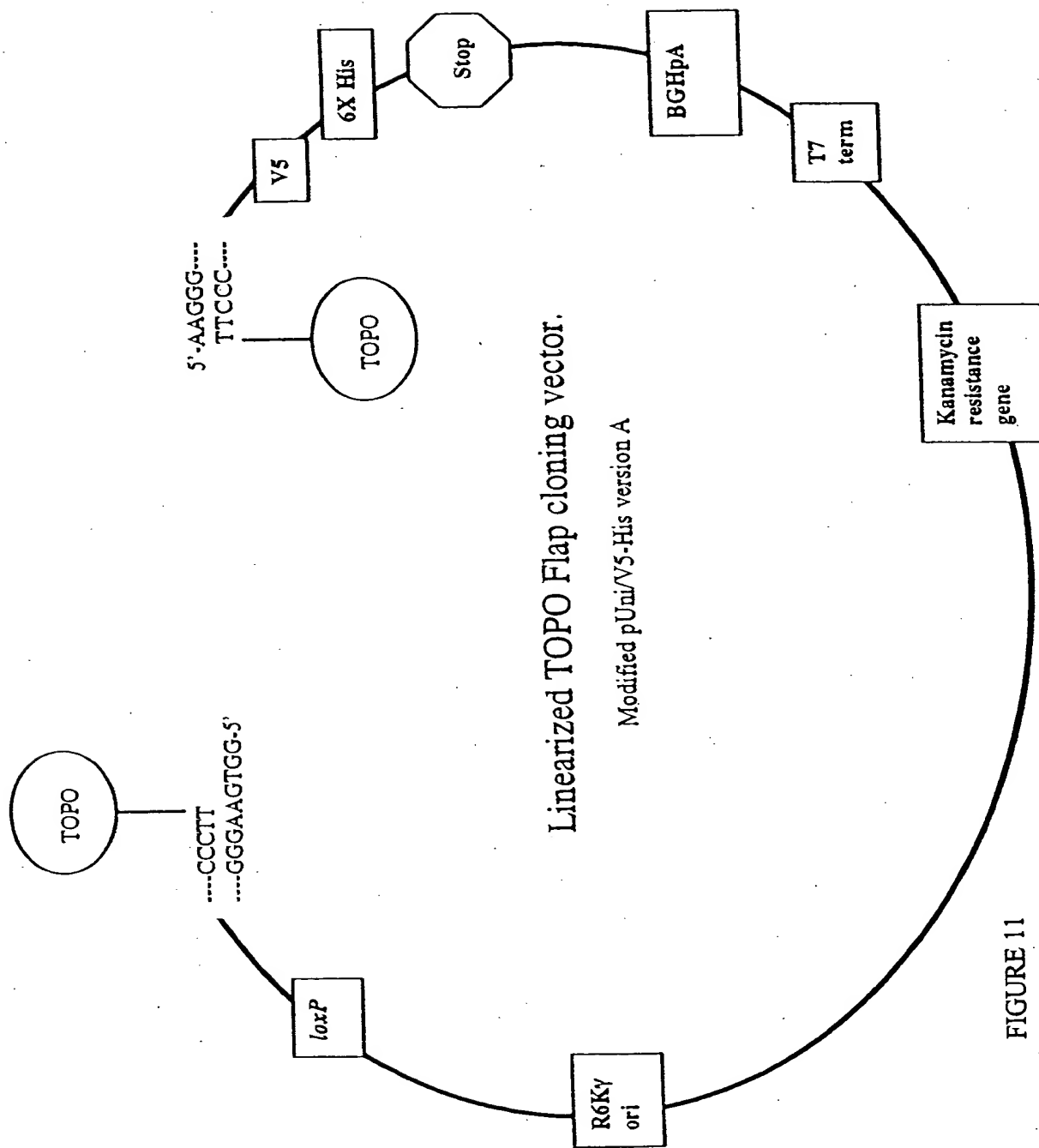


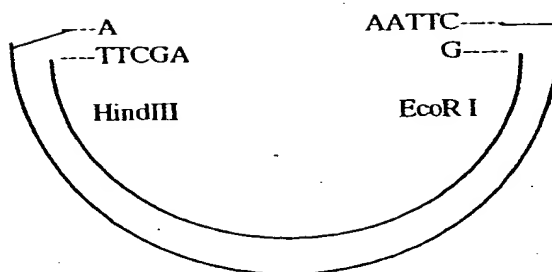
FIGURE 11

Sequence of pCR 2.1

AGCGCCCAATACGCAAACCGCCTCTCCCCGCGCGTTGGCCGATTCAATATGCAGCTGGCACGACAGGTT
TCCCGACTGGAAGCGGGCAGTGAGCGCAACGCAATTAATGTGAGTTAGCTCACTCATTAGGCACCCAG
GCTTTACACTTTTATGCTTCCGGCTCGTATGTTGTGTGGAATTGTGAGCGGATAACAATTTACACAGGAA
ACAGCTATGACCATGATTACGCCAAGCTTGGTACCGAGCTCGGATCCACTAGTAACGGCCGCCAGTGTGC
TGGAATTCCGGCTTAAGCCGAATTTGTCAGATATCCATCACACTGGCGGCCGCTCGAGCATGCATCTAGAG
GGCCCAATTCGCCCTATAGTGAGTCGTATTACAATTCAGTGGCCGTCGTTTTACAACGTCGTGACTGGGA
AAACCCCTGGCGTTACCCAACCTAATCGCCTTGCAGCACATCCCCCTTTCCGCCAGCTGGCGTAATAGCGAA
GAGGCCCGCACCGATCGCCCTTCCCAACAGTTGCCGAGCCTGAATGGCGAATGGGACCGCCCTGTAGCG
GCGCATTAAAGCGCGGCGGGTGTGGTGGTTACGCGCAGCGTGACCGCTACACTTGGCAGCGCCCTAGCGCC
CGCTCCTTTCCGCTTTCTTCCCTTCTTCTCGCCACGTTCCGCCGCTTTCCCGCTCAAGCTCTAAATCGG
GGGCTCCCTTTAGGGTTCCGATTTAGAGCTTTACGGCACCTCGACCGCAAAAACTTGATTTGGGTGATG
GTTACAGTAGTGGGCCATCGCCCTGATAGACGGTTTTTCGCCCTTTGACGTTGGAGTCCACGTTCTTTAA
TAGTGGACTCTTGTTCCAAACCTGGAACAACACTCAACCCCTATCGCGGTCTATCTTTTGATTATAAGGG
ATTTTGCCGATTTCCGGCTATTGGTTAAAAAATGAGCTGATTTAACAATTCAGGGCGCAAGGGCTGCTA
AAGGAACCCGGAACACGTAGAAAGCCAGTCCGCAGAAACGGTGCTGACCCCGGATGAATGTCAGCTACTGG
GCTATCTGGACAAGGGAAAACGCAAGCGCAAGAGAAAGCAGGTAGCTTGAGTGGGCTTACATGGCGAT
AGCTAGACTGGGCGGTTTTATGGACAGCAAGCGAACCAGGAATTGCCAGCTGGGGCGCCCTCTGGTAAGGT
TGGAAGCCCTGCAAAAGTAACTGGATGGCTTTCTTGGCCCAAGGATCTGATGGCGCAGGGGATCAAGA
TCTGATCAAGAGACAGGATGAGGATCGTTTCGCATGATTGAACAAGATGGATTGCACGCAGGTTCTCCGG
CCGCTTGGGTGGAGAGGCTATTCCGCTATGACTGGGCACAACAGACAATCGGCTGCTCTGATGCCGCCGT
GTTCCGGCTGTCAGCGCAGGGGCGCCCGGTTCTTTTTGTCAAGACCGACCTGTCCGGTGCCCTGAATGAA
CTGCAGGACGAGGCGAGCGCGGCTATCGTGGCTGGCCACGACGGGCGTTCCCTTGGCAGCTGTGCTCGACG
TTGTCACCTGAAGCGGGAAGGACTGGCTGCTATTGGGCGAAGTGCCGGGGCAGGATCTCCTGTCTATCTCG
CCTTGCCTCCGCGAGAAAGTATCCATCATGGCTGATGCAATGCGGCGGCTGCATACGCTTGATCCGGCT
ACCTGCCCATTCGACCACCAAGCGAAACATCGCATCGAGCGAGCACGTAAGCTGGATGGAAGCCGGTCTTG
TCGATCAGGATGATCTGGACGAAGAGCATCAGGGGCTCGCGCCAGCCGAACCTGTTCCGCCAGGCTCAAGGC
GCGCATGCCCGACGGCGAGGATCTCGTCTGTATCCATGCGGATGCCTGCTTGGCGAATATCATGGTGGAA
AATGGCCGCTTTCTGATTCAACAGCGTAAGATCCTTGAGAGTTTTCCGCCGAAGAACGTTTTCCAATGATGAGCA
CTTTTAAAGTTCTGCTATGTCATACACTATTATCCCGTATTGACGCCGGGCAAGAGCAACTCGGTCCGCC
GGCGCGGTATTCTCAGAATGACTTGGTTGAGTACTACCAAGTACAGAAAAGCATCTTACGGATGGCATG
ACAGTAAGAGAATTATGCAGTGTGCCATAACCATGAGTGATAACACTGCGGCCAACTTACTTCTGACAA
CGATCGGAGGACCGAAGGAGCTAACCGCTTTTTTGACAAACATGGGGGATCATGTAACCTGCCTTGATCG
TTGGGAACCGGAGCTGAATGAAGCCATACCAACGACGAGAGTGACACCACGATGCCTGTAGCAATGCCA
ACAACGTTGCGCAAACTATTAACCTGGCGAACTACTTACTCTAGCTTCCCGGCAACAATTAATAGACTGGA
TGGAGGCGGATAAAGTTGCAGGACCACTTCTGCGCTCGGCCCTTCCGGCTGGCTGGTTTATGCTGATAA
ATCTGGAGCCGGTGAGCGTGGGTCTCGCGGTATCATTGCAGCACTGGGGCCAGATGGTAAGCCCTCCCGT
ATCGTAGTTATCTACAGACGGGGAGTCAGGCAACTATGGATGAACGAAATAGACAGATCGCTGAGATAG
GTGCCCTACTGATTAAAGCATTTGTAACCTGTCAGACCAAGTTTACTCATATATACTTTAGATTGATTTAAA
ACTTCATTTTTTAATTTAAAAGGATCTAGGTGAAGATCCTTTTTGATAATCTCATGACCAAAATCCCTTAA
CGTGAGTTTTCTGTTCCACTGAGCGTCAGACCCGTAAGAAAAGATCAAAGGATCTTCTTGAGATCCTTTTT
TTCTGCGCGTAATCTGCTGCTTGCAAAACAAAAAACCCCGCTACCAGCGGTGGTTTGTGTTGCCGGATCA
AGAGCTACCAACTCTTTTTCCGAAGGTAACCTGGCTTCAGCAGAGCGCAGATAACCAAACTACTGTCTTCTA
GTGTAGCCGTAGTTAGGCCACCACTTCAAGAACTCTGTAGCACCAGCTTACATACTCGCTCTGCTAATCC
TGTTACCAGTGGCTGCTGCCAGTGGCGATAAGTCTGTCTTACCGGGTTGGACTCAAGACGATAGTTACC
GGATAAGGCGCAGCGGTCCGGCTGAACGGGGGGTTCTGTGCACACAGCCCAGCTTGGAGCGAACGACCTAC
ACCGAACTGAGATACCTACAGCGTGAGCATTGAGAAAAGCGCCACGCTTCCCGAAGGGAGAAAGGCGGACA
GGTATCCGGTAAGCGGCAGGGTCCGAACAGGAGAGCGCAGGAGGGAGCTTCCAGGGGGAAACGCGCTGGTA
TCTTTATAGTCTGTCCGGTTTCGCCACCTCTGACTTGAGCGTTCGATTTTTGTGATGTTCTCGTCAGGGGG
CGGAGCCTATGGAAAAACGCGCAGCAACGCGCTTTTACGGTTCTTGGCCTTTTGTGCTGGCCTTTTGTCTC
ACATGTTCTTTCTGCGTTATCCCTGATTCTGTGGATAACCGTATTACCGCCTTTGAGTGAGCTGATAC
CGCTCGCCGACCGGAACGACCGAGCGCAGCGAGTCAGTGAGCGAGGAAGCGGAAG

FIGURE 12

A



B

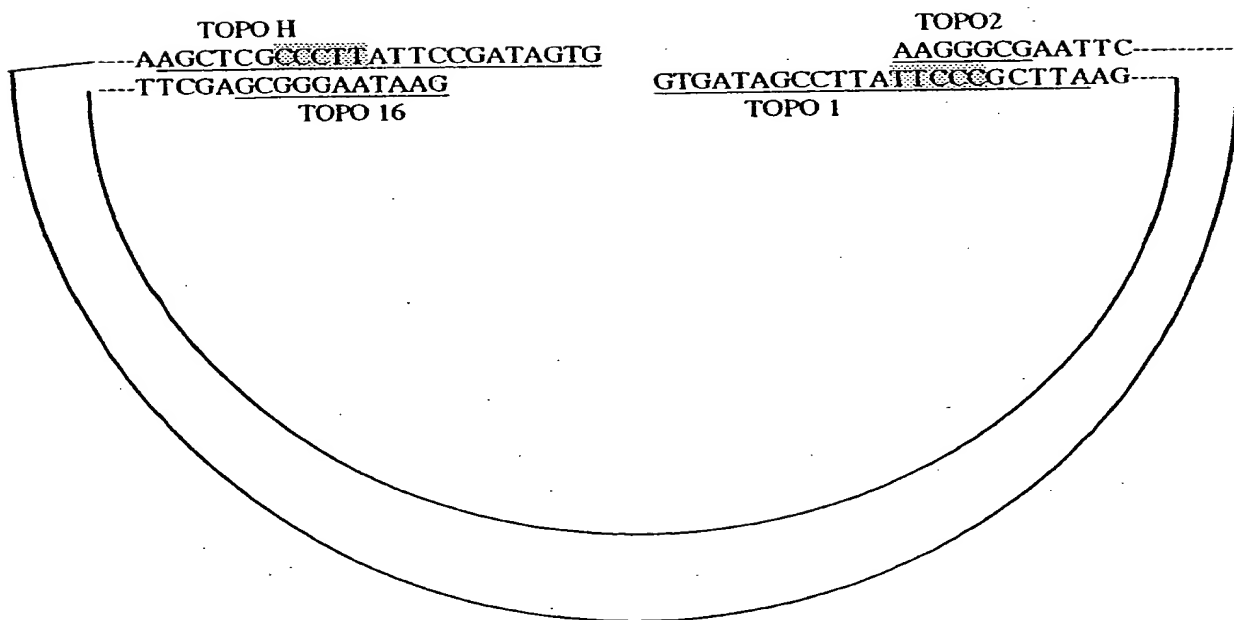
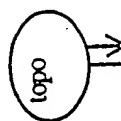


FIGURE 13

1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100.

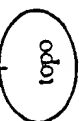
TOPO H
 ----AAGCTCGGGCTTATTCCGATAGTG
 ----TTCGAGCGGGAATAAGGCTATCAC
 TOPO 16
 TOPO 3
 CAACACTATCGGAATAAGGGCGAATTC
 GTGATAGCCTTATTCGGGCTTAAG
 TOPO 1*

ADD TOPOISOMERASE



----AAGCTCGGGCTTATTCCGATAGTG
 ----TTCGAGCGGGAATAAGGCTATCAC

CAACACTATCGGAATAAGGGCGAATTC
 GTGATAGCCTTATTCGGGCTTAAG



Leaving Groups

ATTCCGATAGTG
 GCTATCAC
 CAACACTATCGGAAT
 GTGATAGCCTTA-



----AAGCTCGGGCTTATTCCGATAGTG
 ----TTCGAGCGGGAATAAG
 5'P

5'P

AAGGGCGAATTC
 TCCCGGCTTAAG



FIGURE 14

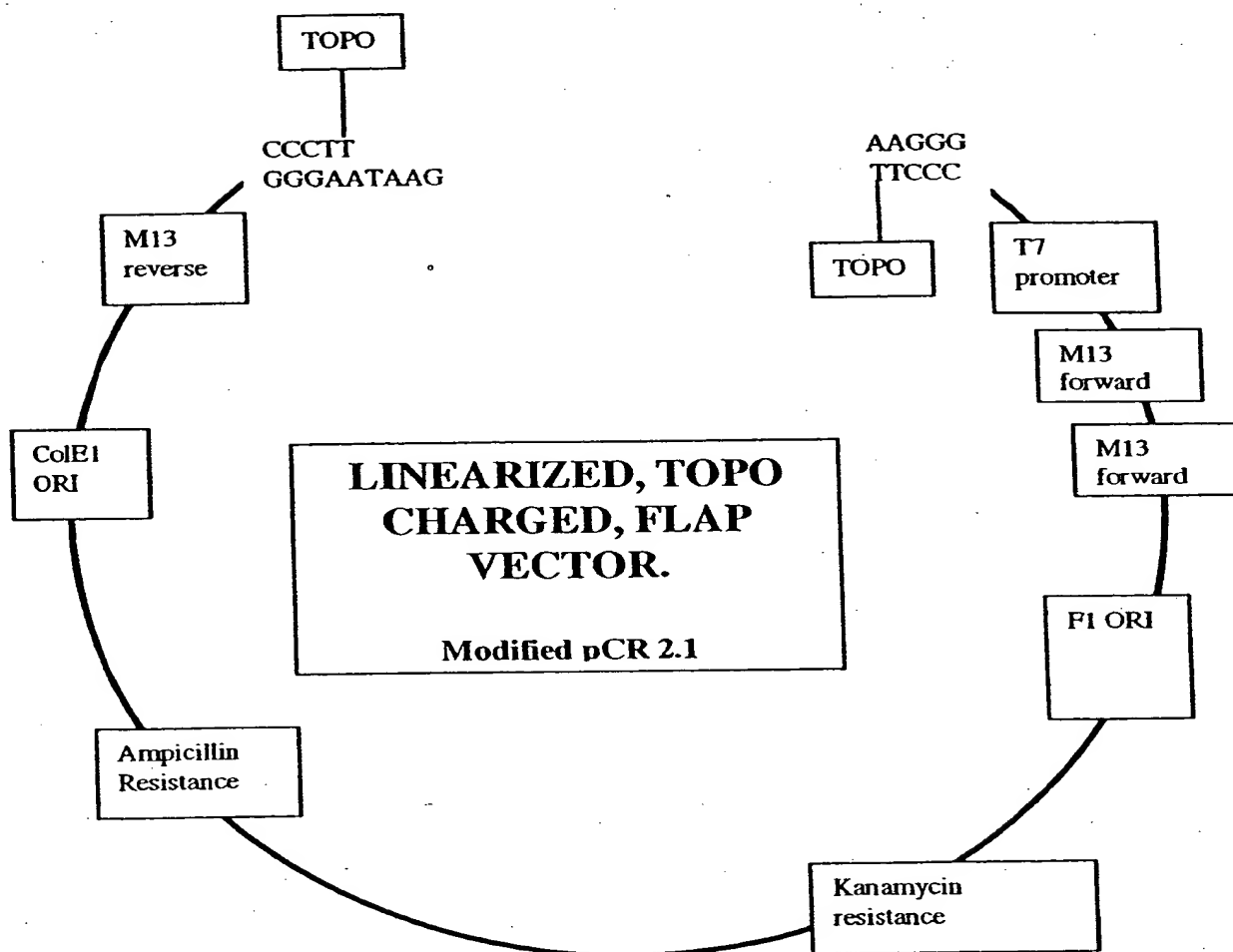


FIGURE 15

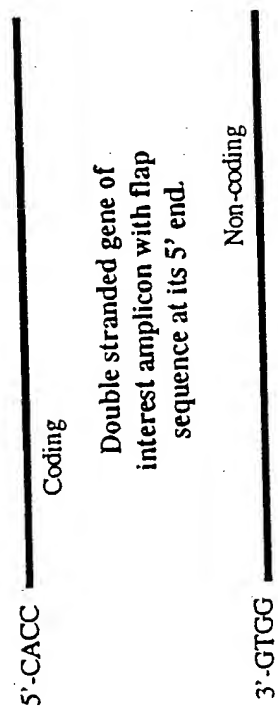
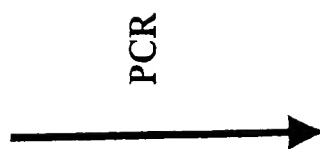
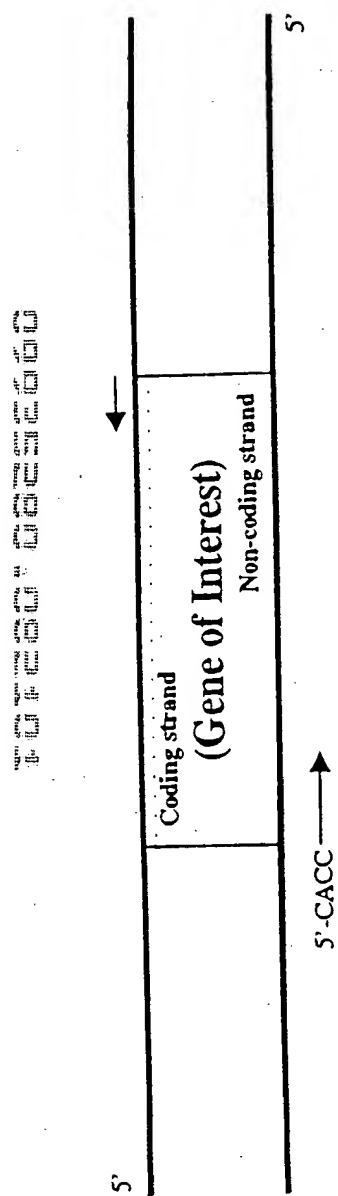
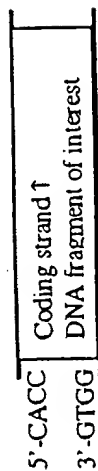


FIGURE 16

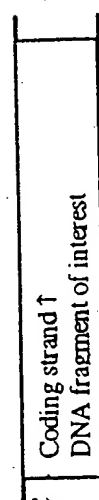
5'-CACC Coding strand ↑
3'-GTGG DNA fragment of interest



5'-CCCTT
3'-GGGAAGTGG

AAGGG-3'
TTCCC-5'

TOPO FLAP CLONING VECTOR



5'-CCCTT CACC
3'-GGGAAGTGG

AAGGG-3'
TTCCC-5'

TOPO FLAP CLONING VECTOR

FIGURE 17